REMARKS

Claims 14, 16, 17, 19-20, 22-25, 29 and 30 are pending in this application. Prosecution in this matter was closed with a Final Office Action dated October 26, 2010. A Notice of Appeal was filed on January 24, 2011. This Amendment is being submitted along with a Declaration and a Request For Continued Examination so that the Examiner may consider the accompanying Declaration, amended claims and accompanying arguments.

By this Amendment, the features of claim 16 have been incorporated into claim 14. Claim 14 has also been amended to recite that components b) and c) are produced with a particular class of metallocene catalysts, support for which can be found at page 6, lines 14-16. Claim 16 has been cancelled without prejudice or disclaimer. Entry and consideration of these amendments is earnestly requested in that it does not introduce new matter.

Claim Rejections

Rejections Under 35 U.S.C. § 103

A. Response to rejection of claims 14, 16, 17, 19, 20, 22-25, 29, and 30 under 35 U.S.C. §103(a) as being unpatentable over Pelliconi et al. in view of Winter et al.

In response to the rejection of claims 14, 16, 17, 19, 20, 22-25, 29 and 30 under 35 U.S.C. 103(a) as being unpatentable over International Publication No. WO 03/051984 of Pelliconi et al. ("Pelliconi") in view of U.S. Patent No. 5,145,819 of Winter et al. ("Winter"), Applicants respectfully submit that a *prima facie* case of Obviousness has not been made out, and traverse the Rejection.

First and foremost, as outlined in Applicants' previous responses, Applicants are currently claiming propylene polymer compositions comprising, in part, a specific propylene homopolymer or propylene copolymer component (a) made with a Ziegler Natta catalyst; a specific ethylene copolymer with octene as component (b); and a specific propylene/ethylene copolymer as component (c), wherein component (b) is present in a specific weight ratio, and where components (b) and (c) are obtained by using at least one metallocene compound of formula (I) or (II). In fact, as outlined in Applicant's specification on page 1, lines 2-3 and 26-27,

> The present invention relates to a propylene polymer composition having improved impact-stiffness balance.

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> The applicant has surprisingly found that the impact-stiffness balance in a propylene composition can be further improved.

Accordingly, as noted in Applicant's specification, the currently claimed propylene polymer compositions unexpectedly exhibit a better impact-stiffness balance.

The Examiner has rejected the claims by adopting an incorrect standard of inherency to facilitate assumption of various claimed properties, followed by applying a theory of Obviousness inconsistent with the Law of the Federal Circuit. These are discussed in turn.

Inherency

Throughout the prosecution of the Present Application, the Examiner has acknowledged that Pelliconi do not teach several of the claimed properties of components (a)-(c), but nevertheless has argued that these properties are inherently taught. The following passage from the Office Action issued July 9, 2008 is exemplary

> Pelliconi fails to disclose the properties of such as the lack of 2,1 regioerrors in the ^{13}C NMR of the composition as discussed in claim 15; the intrinsic viscosity of the individual polymer components which make up the polymer composition, as discussed in claims 14, 19, and 23; the crystallinity or enthalpy of fusion of individual polymer components as recited in claims 14, 23, and 25; or the value of the reactivity ratios, r1xr2, as discussed in claims 14, 16, and 24. Pelliconi also does not disclose the properties of the polydispersity index, melt flow rate, or xylene solubility for the polymer corresponding to component (a) as disclosed in claim 14.
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> As the compositions disclosed in Pelliconi comprise polymer resins which are prepared via polymerization of the same monomers and using the same catalysts as those disclosed in the instant application, the examiner takes the position that one of ordinary skill in the art would reasonably expect that the properties of the polymer compositions taught by Pelliconi would not be materially different from

those of the polymer compositions of the instant application. (page 8-9, paragraphs 19-20)

Certainly, the record does not provide basis for such a conclusion of inherency. First, the current claims recite a composition containing components a) to c), where component a) is a particularly specified material produced using a Ziegler Natta catalyst, component b) is a particularly specified C_2/C_8 copolymer, component c) is a particularly specified C_3/C_2 copolymer, and b) and c) are produced with a metallocene type catalyst. Such a composition is not particularly taught in Pelliconi. The Examiner has pointed to page 5, line 26 to page 6, line 1 of Pelliconi as allegedly teaching bridged bis-indenyl metallocene catalysts, as disclosed in Winter. However, Pelliconi also discloses stereospecific Ziegler-Natta catalyst (page 3, lines 25-26) and constrained-geometry catalysts (page 5, lines 30-32). Moreover, all of Pelliconi's working examples are of C_2/C_4 polymers produced with a Ziegler Natta catalyst. In contrast, in the current claims component (a) is made with a Ziegler-Natta catalyst, while both component (b), a C_2/C_8 copolymer and component (c), a C_3/C_2 copolymer are mde with a particular class of metallocene catalysts.

The Examiner cannot point to examples in Pelliconi where such a polymer composition or its components, produced with both Ziegler and Metallocene catalysts, is produced. This is because they do not exist. Applicants note that in the most recent office action regarding claim 30, the Examiner gives no weight to the catalyst limitation as being product-by-process. However, it is fundamental in polymer science that differences exist between Ziegler Natta vs. Metallocene catalysts that are reflected in the polymer structure obtained.

The Examiner also cannot point to examples in Pelliconi where a C_2/C_8 polymer is produced. This is also because they also don't exist. Further, the Examiner is simply mistaken to the extent he equates the properties and performance of a C_2/C_4 copolymer with a C_2/C_8 copolymer, not to mention that what is claimed is a combination of three components made with different catalyst systems and having particularly claimed properties. The Examiner certainly cannot point to examples where reactor conditions, catalyst type, and catalyst loading are provided in detail sufficient to demonstrate that the claimed components would necessarily result. Winter, cited by the Examiner, also does not disclose in its working examples a C_2/C_8

copolymer. Indeed, Winter does not disclose in its working examples the production of either propylene copolymers or ethylene-based materials at all.

Nevertheless, the Examiner rationalizes inherency by selectively pointing to various parts of Pelliconi's broader disclosure. This is not the proper standard of inherency. There has been no showing that the materials claimed and those produced in the cited references are substantially identical. Indeed, the standard for inherency argued by the Examiner is one of "may be" or "could be." However, inherency may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. *Scaltech Inc. v. Retec/Tetra L.L.C.,* 156 F.3d 1193, 51 USPQ2d 1055 (Fed. Cir. 1999); *In re Robertson*, 169 F.3d 743, 49 USPQ2d 1949 (Fed. Cir. 1999

Indeed, the MPEP outlines a high standard for inherency:

> The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (MPEP 2112(IV), emphasis added)

In merely pointing to the general disclosure of Pelliconi, which does not particularly disclose a composition having components made by the various catalyst systems as claimed, or reactor conditions, or catalyst loading, or where one component is a C_2/C_8 copolymer as in the present claims, the Examiner has not met the Office's own high standard of showing that the claimed properties would necessarily result from the prior art. Instead, the Examiner has merely recited a rationale that the claimed properties "could have" resulted based on selectively picking disparate pieces of Pelliconi's disclosure and specially assembling them. Therefore, the Examiner has not applied the correct standard for inherency, so that no inference may be drawn from the cited example, i.e., the Office Action concedes that Pelliconi and Winter do not teach all of the various

claimed features, and any reliance on the doctrine of inherency to provide this necessary teaching is improper. For this reason alone, the Rejection should be withdrawn.

Obviousness

A proper analysis under § 103 requires, inter alia, consideration of two factors: (1) whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed composition or device, or carry out the claimed process; and (2) whether the prior art would also have revealed that in so making or carrying out, those of ordinary skill would have a reasonable expectation of success" (emphasis added). *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991). Neither is present in the Rejection currently of record.

As discussed at length above, the Examiner has acknowledged that various claimed properties of the components in the current composition are not disclosed. These limitations are not properly met by the Examiner's standard of inherency. However, even if some were; even if some of the claimed property limitations were inherent, the Examiner has not offered any reason why one skilled in the art would formulate a polymer that simultaneously had all components possessing particular properties in the particular ranges claimed. Analysis under 35 U.S.C. §103 requires showing that "there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) "We must still be careful not to allow hindsight reconstruction of references to reach the claimed invention without any explanation as to how or why the references would be combined to produce the claimed invention." *Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1374 n.3 (Fed. Cir. 2008). In this case, the Examiner has clearly not provided a reason as to why the ordinary artisan would have produced a polymer composition simultaneously containing each of the components, made using the recited catalysts, each having the claimed properties, based on the cited references.

In formulating the Rejection, Applicants respectfully submit that the Examiner has improperly used the invention as a blueprint for linking together pieces of prior art in order to find the invention obvious. *See Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1141 (Fed. Cir. 1985). The Federal Circuit has referred to using the invention as a "blueprint for piecing together the prior art … [as] the essence of hindsight." *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999). By selectively choosing: (1) the teaching of a Ziegler-Natta produced

propylene homopolymer or copolymer for component (a) out of Ziegler-Natta, metallocene, or constrained geometry catalyst-produced components; (2) concluding that Pelliconi also teaches simultaneously producing components (b) and (c) from a metallocene catalyst instead of a Ziegler Natta catalyst (as was already assumed to produce component (a)), or for that matter a constrained-geometry catalyst; (3) choosing 1-octene as the comonomer with ethylene for component (b) out of a selection of C_4-C_{10} α-olefins despite all of Pelliconi's working examples illustrating C_4 as the comonomer with ethylene, and C_4 being the preferred comonomer; (4) choosing a 1-octene comonomer level of 10-30 mol% for component (b); and finally (5) choosing a particular selection of metallocene catalysts out of Winter, the Examiner has improperly used "'hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention'" *Ecolochem, Inc. v. S. Cal. Edison Co.*, 227 F.3d 1361, 1371 (Fed. Cir. 2000) (quoting *In re Fine*, 837 F.2d 1071, 1075 (1988)). The Examiner has effectively conducted a "reference-by-reference, limitation-by-limitation analysis" which fails to demonstrate how the invention is obvious in light of prior art. (*See Ecolochem* at 1374)

Exemplary of the applied rationale by the Examiner under 103 is the Examiner's arguments relative to the recited catalysts used to produce the composition. In the May 12, 2010 Office Action, the Examiner contended:

> Barring a showing of factual evidence demonstrating unexpected results, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to use <u>any</u> of the catalysts disclosed by Pelliconi as suitable for use in preparing components of the prior art composition. (page 4, paragraph 11, emphasis added)

In view of the breadth of catalyst choices in Pelliconi and the use of Pelliconi as allegedly teaching combinations of the various catalysts to produce the three components in the polymer composition, the Examiner's contention that it would have been <u>obvious</u> to use "<u>any</u>" of the disclosed catalysts (Ziegler Natta or metallocene or constrained geometry --- or combinations thereof to produce various polymer components) demonstrates an Obviousness Standard in this matter which is clearly not that of the Supreme Court, which requires a finding of a:

> finite number of identified, predictable solutions *KSR Int'l Co. v. Teleflex Inc.,* 127 S. Ct. 1727, 1742 (2007).

or the Federal Circuit which requires

a finite (and small in the context of the art) number of options easily traversed to show obviousness." *Ortho-McNeil Pharmaceutical, Inc. v. Mylan Laboratories, Inc.*, 520 F.3d 1358, 1364 (Fed. Cir. 2008).

The Examiner's standard of Obviousness is not that of the Supreme Court and the Federal Circuit. It is the opposite of such a standard.

Rather than attempting to show a reason why one of skill in the art would have modified the reference as suggested by the Examiner, the Examiner's position appears to be that any disclosure of a limitation, no matter how generic, isolated or out of context with other limitations is sufficient for the purposes of §103 unless there is an explicit teaching away:

> Regarding the use of 1-octene as the comonomer in the ethylene/1-octene copolymer: As noted above, Pelliconi specifically discloses 1-octene as a suitable embodiment of the C_4-C_{10} α-olefin. Similar to the rationale outlined in the previous paragraph, the mere fact that Pelliconi discloses examples wherein 1-butene is used as the comonomer is not sufficient to constitute a teaching away from Pelliconi's broader disclosure of olefin comonomers having greater than 4 carbon atoms. (Final Office Action, page 4, paragraph 10).

In this case, although all of Pelliconi's examples exhibit C_2/C_4 materials, and C_4 is the preferred comonomer, the Examiner concludes that the use of 1-octene would be obvious because it is included in a list of possible comonomers. However, what is claimed is a composition, each component of which is particularly specified, where component (b) is a C_2/C_8 copolymer. As discussed above, the Examiner simply points to a mention of 1-octene in the broad disclosure, but does not explain why one skilled in the art would have made the particular substitutions to arrive at component (b), much less all the modifications required to assemble the claimed composition of components (a), (b), and (c). Such a reference-by-reference, limitation-by-limitation approach- is not the Law of the Federal Circuit. Therefore, for all the reasons

above, Applicants respectfully submit that a *prima facie* case of Obviousness has not been made out.

Unexpected Results

However, even if a *prima facie* case of Obviousness had been made out, Applicants respectfully submit that as discussed in the accompanying Declaration by Dr. Pellegatti, the present Specification sets forth unexpected results that overcome such a case.

Applicants respectfully submit that the present claims recite a combination of polymer components having particular features, which in combination provide a polymer composition having an improved impact-stiffness balance. Such features include the enthalpy of fusion (crystallinity content) and reactivity ratio (randomness) for polymers (b) and (c). Furthermore, the comonomer used for component (b) is 1-octene, component (a) is produced with a Ziegler Natta catalyst, and a specific metallocene catalyst is specified for polymers (b) and (c), which leads to a polymer where the enthalpy of fusion (crystallinity content) and reactivity ratio (randomness) for polymers (b) and (c) are in the claimed range.

The examples according to the invention embody the above features, and clearly demonstrate that the absolute values of flexural modulus (and also of tensile "Young" modulus) and Izod depend at least on the relative amounts of rubbery (elastomeric components (b) and (c)) and crystalline phase (matrix (a)). Ex. 2 and ex. 4 in table 3 illustrate the trend (increase of modulus, decrease of izod) expected when increasing the amount of matrix. In this respect, Pelliconi's examples lie in the range of 70% matrix 30% of rubber. Therefore, one skilled in the art would understand that Pelliconi's examples, in particular example 9, could be compared with example 2 of the present invention.

As discussed in the Declaration, physical properties were measured in a sample of *Clyrell* EC340Q, a propylene heterophasic polymer having 30 wt% of a C_2/C_4 rubber, and produced with a Ziegler Natta catalyst. Because of the similarity in overall composition, rubber makeup, and catalyst used to produce them, one skilled in the art would readily recognize that Example 9 of Pelliconi and *Clyrell* EC340Q would respond similarly from an Izod-measurement standpoint. Physical testing of the Clyrell sample demonstrated a value of 3.7 KJ/m^2 at a temperature of -20°C. One skilled in the art would readily recognize that values lower than 3.7 KJ/m^2 would be obtained at temperatures lower than -20°C on that sample polymer. Therefore, Example 9 of Pelliconi would

also be expected to have an Izod value lower than 3.7 KJ/m^2 for a measurement taken at -30°C. Moreover, because of the similarity in rubber content and range of modulus (flexural/tensile), Example 9 of Pelliconi and Example 2 of the Present Application are comparable from an Izod-measurement standpoint.

The present Specification illustrates that Example 2 of the present application exhibits an Izod value at -30°C, of 6.7 KJ/m^2. In light of an Izod value of approximately 3.7 KJ/m^2 expected for Pelliconi's example 9 at -30°C, one skilled in the art would readily understand that the mechanical (impact) properties of the presently claimed compositions are substantially improved over Pelliconi, in that Pelliconi's composition have worse impact at low temperature than compositions of the current claims. Therefore, even if a *prima facie* case of Obviousness had been made out, unexpected positive results have been demonstrated that overcome such a case.

Applicants respectfully request that a timely Notice of Allowance be issued in this case. Should the Examiner have questions or comments regarding this application or this Amendment, Applicants' attorney would welcome the opportunity to discuss the case with the Examiner.

The Commissioner is hereby authorized to charge U.S. PTO Deposit Account 50-4380 in the amount of any fee required for consideration of this Amendment.

Respectfully submitted,

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I hereby certify that this correspondence is being transmitted via the U.S. Patent and Trademark Office electronic filing system (EFS-Web) to the USPTO on March 23, 2011.

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